

5       What is claimed is:

1.       An imaging system comprising:

- (a)     an imaging device sensing an object;
- (b)     a backing in opposing relationship with said object; and
- (c)     said imaging system determines at least one general bounding  
10           region of said object, based at least in part, on a spatial  
          determination of said general bounding region having sufficient  
          spatial extent.

15       2.       The imaging system of claim 1 wherein said object is a substantially flat  
          document.

3.       The imaging system of claim 2 wherein said backing is a cover and is  
          substantially flat and is in face-to-face relationship with said object.

20       4.       The imaging system of claim 3 wherein said second background color  
          covers a major portion of said cover.

25       5.       The imaging system of claim 4 wherein said imaging system determines a  
          plurality of boundaries of said object.

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6. The imaging system of claim 5 wherein said imaging system determines four boundaries of said object.

7. The imaging system of claim 5 wherein said imaging device has a flat surface supporting said object.

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8. The imaging system of claim 7 wherein said object is paper.

9. The imaging system of claim 1 wherein said imaging system converts a first color space of an image obtained from sensing said object to a second color space where the luminance of said image is enhanced over the first color space for determining said at least one boundary of said object.

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10. The imaging system of claim 9 wherein said first color space includes a plurality of dimensions and said second color space includes fewer dimensions than said first color space.

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11. The imaging system of claim 10 wherein said first color space is red, green, and blue, and said second color space is luminance.

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12. The imaging system of claim 1 wherein said imaging system increases the differences of values in the range of likely document edge values.

5           13.    The imaging system of claim 12 wherein said imaging system converts a first color space of an image obtained from sensing said object to a second color space where the luminance of said image is enhanced over the first color space when determining said at least one boundary of said object.

10           14.    The imaging system of claim 1 wherein an image obtained from sensing said object has a plurality of horizontal rows of pixels, said imaging system grouping said horizontal rows of pixels in a plurality of groups, each of said groups including a plurality of said horizontal rows of pixels, computing a statistical measure in a direction transverse to said horizontal  
15           row of pixels, using said statistical measure in determining said at least one boundary of said object.

            15.    The imaging system of claim 1 wherein an image obtained from sensing said object has a plurality of vertical columns of pixels, said imaging  
20           system grouping said vertical columns of pixels in a plurality of groups, each of said groups including a plurality of said vertical columns of pixels, computing a statistical measure in a direction transverse to said vertical column of pixels, using said statistical measure in determining said at least one boundary of said object.

25           16.    The imaging system of claim 14 wherein an image obtained from sensing said object has a plurality of vertical columns of pixels, said imaging

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system grouping said vertical columns of pixels in a plurality of groups,  
each of said groups including a plurality of said vertical columns of pixels,  
computing a statistical measure in a direction transverse to said vertical  
column of pixels, using said statistical measure in determining said at least  
one boundary of said object.

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17. The imaging system of claim 14 further comprising determining edges  
within the data determined as a result of computing said statistical  
measure.

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18. The imaging system of claim 15 further comprising determining edges  
within the data determined as a result of computing said statistical  
measure.

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19. The imaging system of claim 16 further comprising determining edges  
within the data determined as a result of computing said statistical  
measures.

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20. The imaging system of claim 17 wherein a set of statistical measures in a  
direction transverse to said horizontal row of pixels from a plurality of  
said groups are statistically processed for determining said at least one  
boundary of said object.

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21. The imaging system of claim 18 wherein a set of statistical measures in a direction transverse to said vertical column of pixels from a plurality of said groups are statistically processed for determining said at least one boundary of said object.

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22. The imaging system of claim 20 wherein the result of processing said set of statistical measures are further processed to emphasize spatial regions of increased statistical measure.

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23. The imaging system of claim 21 wherein the result of processing said set of statistical measures are further processed to emphasize spatial regions of increased statistical measure.

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24. The imaging system of claim 20 wherein said determining said at least one boundary of said object is based upon a variable threshold value calculated based upon said set of statistical measures.

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25. The imaging system of claim 21 wherein said determining said at least one boundary of said object is based upon a variable threshold value calculated based upon said set of statistical measures.

5                   26.     The imaging system of claim 24 wherein said variable threshold value is  
calculated based upon a percentage of the maximum observed statistical  
measure.

                  27.     The imaging system of claim 25 wherein said variable threshold value is  
10                calculated based upon a percentage of the maximum observed statistical  
measure.

                  28.     The imaging system of claim 1 wherein an image obtained from  
sensing said object has a plurality of horizontal rows of pixels.

15                   29.     The imaging system of claim 28 wherein said spatial determination  
determines, based upon said horizontal rows of pixels, regions including generally  
vertical edges.

20                   30.     The imaging system of claim 29 wherein said spatial determination  
determines, based upon said horizontal rows of pixels, regions of non-generally vertical  
edges.

                  31.     The imaging system of claim 30 further comprising determining  
25                regions within said horizontal rows of pixels as potential generally vertical edges.

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32. The imaging system of claim 31 further comprising modifying said potential generally vertical edges as non-generally vertical edges based upon a spatial determination.

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33. The imaging system of claim 32 wherein said generally vertical edge is transverse to said horizontal row of pixels.

34. The imaging system of claim 1 wherein an image obtained from sensing said object has a plurality of vertical columns of pixels.

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35. The imaging system of claim 34 wherein said spatial determination determines, based upon said vertical columns of pixels, regions including generally horizontal edges.

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36. The imaging system of claim 35 wherein said spatial determination determines, based upon said vertical columns of pixels, regions of non-generally horizontal edges.

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37. The imaging system of claim 36 further comprising determining regions within said vertical columns of pixels as potential generally horizontal edges.

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38. The imaging system of claim 37 further comprising modifying said potential generally horizontal edges as non-generally horizontal edges based upon a spatial determination.

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39. The imaging system of claim 38 wherein said generally vertical edge is transverse to said horizontal row of pixels.

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